BOTANICAL MUSEUM LEAFLETS
HARVARD UNIVERSITY

CAMBRIDGE, MASSACHUSETTS, APRIL 18, 1949 VOL. 13, NO. 9

PLANTAE AUSTRO-AMERICANAE V

DE PLANTIS PRINCIPALITER COLOMBIAE OBSERVATIONES

BY

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A NUMBER of recently made collections, chiefly from Amazonian Colombia, represent hitherto undescribed concepts or range extensions or are the basis of interesting ethnobotanical observations. It appears advisable to present the following miscellany of notes on the significance of these collections as a contribution to our understanding of the South American flora, especially that of the northwesternmost reaches of the Amazonian system.

It is with pleasure that I thank Dr. B. A. Krukoff and Mr. Joseph Monachino of the New York Botanical Garden for determining the collections of *Menispermaceae* and *Strychnos;* Mr. Charles Schweinfurth of the Botanical Museum of Harvard University for identifying the orchids; and Dr. Adolpho Ducke of the Instituto Agronômico do Norte (Belém do Pará) for naming the collection of *Leptothyrsa Sprucei.*

ORCHIDACEAE

Cattleya violacea (*HBK.*) *Rolfe* in Gard. Chron. ser. 3, 5 (1889) 802.

Cattleya violacea is well known from Amazonian Brazil, from southern Venezuela and British Guiana. In

Colombia, it has previously been collected (*Haught 2810*) at San José de Ocune on the Río Vichada, to the northeast of the locality of *Schultes 5380*.

Colombia: Comisaría del Vaupés, Macaya-Ajaju River confluence: Mount Chiribiquete. Quartzite base. Summit 800–1200 ft. above forest floor, 1700–2100 ft. above sea level. "Epiphyte. Sepals deep violet, lip deep purple. Spicy fragrance." May 15–16, 1943, *Richard Evans Schultes 5380*.

Pleurothallis ciliata *Knowles & Westcott* Flor. Cab. 1 (1837) 39.

This interesting little orchid has hitherto not been recorded from Colombia. It is known from Trinidad, British Guiana and Peru.

Colombia: Comisaría del Vaupés, Macaya-Ajaju River confluence: Mount Chiribiquete. Quartzite base. Summit 800–1200 ft. above forest floor, 1700–2100 ft. above sea level. "Epiphytic on *Hevea* in forest. All parts of flower yellow." May 15–16, 1943, *Richard Evans Schultes 5418*.

Sobralia rosea *Poeppig & Endlicher* Nov. Gen. ac Sp. 1 (1836) 54, t. 93.

Known from the eastern Andean slopes of Ecuador and Peru, *Sobralia rosea* has previously been reported from Colombia on the basis of a collection from Norte de Santander (Schlechter in Fedde Repert. Beihefte 7 (1920) 212). The locality of *Schultes & Smith 3049*, though very distant from the only other Colombian collection, fills in an extensive gap in our knowledge of the range of this beautiful orchid.

Colombia: Comisaría del Putumayo, Cerro de Portachuelo, entre Mocoa y Sacchamates, alt. ca. 1600–2000 m. "Large clumps with erect stems 8–12 ft. tall. Flowers white; lip fringed with purple." December 9, 1942, *Richard Evans Schultes & C. Earle Smith 3049*.—Comisaría del Putumayo, Río San Miguel ó Sucumbíos, Santa Rosa y los alrededores; alt. 380 m.? "Flowers white, tips of column purple." April 7–8, 1942, *Richard Evans Schultes 3559*.

VELLOZIACEAE

Vellozia phantasmagoria *R. E. Schultes* in Bot. Mus. Leafl. Harvard Univ. 12 (1946) 130, t. XIX, XX.

The sterile collection cited below establishes the occurrence of the curious *Vellozia phantasmagoria* far to the west of its hitherto known range. It was found by Schultes on Cerro Chiribiquete (its type locality) in the upper Río Apaporis drainage-area; and by Paul H. Allen on Cerro Yapobodá, not far from Mitú, in the lower course of the Colombian Vaupés.

COLOMBIA: Comisaría del Vaupés, Río Nequiení (affluent of Río Guainía), Cerro Monachi "Hanging on rocky crags." June 1948, *Richard Evans Schultes & Francisco López 10067*.

MENISPERMACEAE

Abuta grandifolia (*Mart.*) *Sandwith* in Kew Bull. (1937) 397.

Abuta grandifolia, widespread throughout the Amazon Valley and adjacent areas of northern South America, has previously been known from the Vaupés, Caquetá and Putumayo drainage-areas of Colombia (Krukoff and Moldenke in Brittonia 3 (1938) 60; in Bull. Torrey Bot. Club 68 (1941) 240). The Siona Indians of the Putumayo utilize an infusion of the leaves of this plant in treating fevers.

COLOMBIA: Intendencia del Amazonas, Río Putumayo, carretera entre Caucaya (Puerto Leguízamo) y La Tagua, alt. 225 m. "Small tree." May 17, 1942, *Richard Evans Schultes 3740*.

Abuta splendida *Krukoff & Moldenke* in Bull. Torrey Bot. Club 68 (1941) 241.

Described from Bolivian material, *Abuta splendida* has not hitherto been known from the Colombian flora.

COLOMBIA: Comisaría del Putumayo, Río San Miguel ó Sucumbíos, Nonejo y los alrededores, frente a la Quebrada Conejo. Nombre kofán: *sa-pé-pa*. 2–5 abril, 1942, *Richard Evans Schultes 3525*.

Chondodendron toxicoferum (*Wedd.*) *Krukoff & Moldenke* in Brittonia 3 (1939) 338.

This species is well known as an ingredient of arrow-poison in the Amazon Region. Known from Amazonian Peru and Brazil (as *Chondodendron polyanthum*), it was first collected by Castlenau at Pebas in Loreto, Peru, where the Yaguas Indians were utilizing it in the manufacture of curare (Krukoff and Moldenke in Brittonia 3 (1938) 22–23, 338). It has hitherto been collected in Colombia apparently only once: the collection *W. Fox 12b*, which states "poison used for blowpipes," is labelled as coming from "Entre Ríos," a now non-existent settlement on the Río Karaparaná in the Intendencia del Amazonas in Witoto Indian country.

COLOMBIA: Comisaría del Putumayo, Río San Miguel ó Sucumbíos, Conejo y los alrededores, frente a la Quebrada Conejo. Nombre kofán: *sa-pé-pa.* "Wood of stem crushed to make curare poison." 2–5 abril, 1942, *Richard Evans Schultes 3522.*—Comisaría del Amazonas, Rio Hamacayacu. Common name: *quina.* [April] 1943, *F. J. Hermann 11309.*

BALANOPHORACEAE

Helosis guyannensis *L. C. Richard* in Mém. Mus. Hist. Nat. Paris 8 (1822) 416, t. 20.

This is the second collection of *Helosis guyannensis* known from Amazonian Colombia. The first was reported by Schultes in Bot. Mus. Leafl. Harvard Univ. 12 (1946) 117.

COLOMBIA: Intendencia del Amazonas, Río Boiauassú. "Mata virgem. Parásita. Toda a planta e encarnada clara." Ocotober 29, 1946, *George A. Black & Richard Evans Schultes 46–241.*

NYMPHAEACEAE

Victoria regia *Lindley* Monogr. Vict. regia (1837) 3.

Occurring naturally in Colombia probably only along the bank of the Río Amazonas in the trapécio amazónico, where indeed it is very common and abundant within easy walking distance from Leticia, the magnificent *Victoria regia* has hitherto apparently never been collected in Colombian territory. It has been imported from Brazil and is established in a small pond at La Chorrera on the upper Río Igaraparaná, an affluent of the Río Putumayo.

It is interesting to note that the Spanish-speaking inhabitants of the trapécio amazónico know *Victoria regia* as *horno,* just as in Brazil it is called *forno.* The enormous, flat, round leaves resemble the flat, round baked-clay plates or *hornos* on which fariña is toasted and cassabe is baked; this is the explanation of the curious common name.

Colombia: Intendencia del Amazonas, La Chorrera, Río Igaraparaná. "Cultivated." June 1942, *Richard Evans Schultes 3970A.*—Intendencia del Amazonas, Trapécio amazónico, near mouth of Río Boiauassú, in swampy inlet of Río Amazonas on Isla Zancudo, alt. about 100 m. "Leaves spiny beneath, 4–5 feet across. Flowers large, white, turning red or purplish. *Horno.*" October 1945, *Richard Evans Schultes 6786.*—Intendencia del Amazonas, Trapécio amazónico, Leticia. "Beira do rio em terreno enxarcado, dentro da agua." August 19, 1946, *George A. Black & Richard Evans Schultes 46–18.*

Rutaceae

Leptothyrsa Sprucei *Hooker filius* in Bentham & Hooker filius Gen. Pl. 1 (1862) 284.

This rare species, described from material collected by Spruce on the Rio Uaupés of Brazil, has apparently never been recorded from Colombia.

Colombia: Intendencia del Amazonas, [Trapécio amazónico]. "Picada Cotuhé, varial aberto, beira de um corrego. Arbusto, 2 m.; flor branca." November 8, 1946, *George A. Black & Richard Evans Schultes 46–364.*

Euphorbiaceae

Cunuria crassipes *Mueller-Argoviensis* in Martius Fl. Bras. 11, pt. 2 (1874) 510.

Cunuria crassipes was first collected in Colombia by Allen in 1943 (Baldwin and Schultes in Bot. Mus. Leafl. Harvard Univ. 12 (1947) 336). His collection was made on the Río Papurí which forms part of the boundary between Brazil and Colombia. Later, *Cunuria crassipes* was found in the adjacent Brazilian area of the upper Rio Negro and some of its affluents by Baldwin and by Fróes (Baldwin and Schultes, loc. cit.), never at any great distance from the type locality. For this reason, the species was considered to represent a rather restricted endemic.

The most significant collections made recently in the Colombian trapécio amazónico are *Schultes 6909* and *Black & Schultes 46–371*, for they establish the presence of *Cunuria crassipes* very far to the south of the area hitherto considered to be the exclusive home of the species. In 1945, *Schultes 6909*, with several opened capsules but no seeds, was collected during a preliminary study of a low caatinga-like or savanna area on the rather high divide between the Ríos Hamacayacu (Amazon affluent) and Cotuhé (Putumayo affluent). The next year, Mr. George A. Black of the Instituto Agronômico do Norte visited this locality and made the collection *Black & Schultes 46–371*. This collection was sterile, but the large, unusually broad-ovate shape, the relatively thin-papyraceous texture, and the lack of a waxy or glaucescent condition of the upper surface of the leaves all suggested that it might represent a distinct form of *Cunuria crassipes*. The isolation of this station from the nearest known locality of the species seemed to increase the possibility that these differences might be of significance. Accordingly, in September 1948, I sent my assistant, Señor Francisco López, thoroughly familiar with *Cunuria*, to collect more material from the same locality. *López 4* and *5* correspond in every detail with *Schultes 6909* and *Black & Schultes 46–371* and are indeed slightly different from the abundant material gathered from the upper Rio Negro drainage-area. According to López, the tree is unusually abundant at the locality cited.

Further collections of *Cunuria crassipes* have been made recently in the Río Guainía area in Colombian territory, where the species is represented in unbelievable abundance in the sandy, light-forested caatingas where it is known by the Kuripaka Indian name *á-hoon-da.*

In July 1948, López and I crossed from the Rio Uaupés to the Río Caquetá by way of the Tikié—Ira-Igarapé and the Taraíra—Apaporis. We fully expected to find *Cunuria crassipes* in Colombian territory along the Taraíra, but the species was not seen on the river; in fact, it was not seen south of the headwaters of the Ira-Igarapé, an affluent of the Rio Negro drainage area.

I had never succeeded in finding *Cunuria crassipes* in the region of La Pedrera, although there are abundant areas there where the species might be expected to occur. In November 1948, I was fortunate in being able to accompany General Julio Londoño, of the Colombian army, on a special military flight over the Amazonia of Colombia. In flying extremely low over the La Pedrera region, I saw, in a low-forested caatinga a few miles south of the beginning of the constriction of the Caquetá below the rapids at Córdova (Cupatí), what had all the appearances of numerous small trees of *Cunuria crassipes.* We cannot definitely assert that *Cunuria crassipes* occurs at this point on the Caquetá until actual collections are made, but we may say that it is highly probable that it is represented there.

Colombia: Comisaría del Vaupés, Río Papurí, vicinity of Piracuara Mission, alt. about 200 m. "Trees tall, slightly buttressed, averaging 30 m. in height and 60 cm. in diameter. Bark thin, averaging less than 1 cm. Latex yellowish, scant, coagulating to a non-elastic gum. Flowers greenish yellow. Trispermate *Hevea*-like capsule. Known locally as *wah-so-né-né* in Tukano." August 18, 1943, *Paul H. Allen*

3068.—Comisaría del Amazonas, Trapécio amazónico. Interior regions of trapécio between Amazon and Putumayo water-sheds. Alt. above 100 m. "Tree 50 ft. Spreading crown. Fruit like *Hevea.* Latex white." November 1945, *Richard Evans Schultes 6909.*—Comisaría del Amazonas, Trapécio amazónico, Río Hamacayacu, Quebrada Agua Negra. "Arvore 20 m. Latex branco." November 8, 1946, *George A. Black & Richard Evans Schultes 46–471* (Herb. Inst. Agron. Norte 20477).—Comisaría del Amazonas, Río Hamacayacu, Varial at headwaters of Quebrada Agua Negra. "Small-crowned tree 50 ft. tall. Latex white. Buttress roots slender, low. Bark shaggy, externally dark brown, internally reddish." September 1948, *Francisco López 4.* —Comisaría del Amazonas, Río Hamacayacu, Varial at headwaters of Quebrada Agua Negra. "Buttressed tree 50 ft. tall; diameter of columnar trunk 15 inches. Latex rather thick, white. Bark dark brown." September 1948, *Francisco López 5.*—Comisaría del Vaupés, Río Guainía, region near Sejál. "Slightly buttressed tree 45–50 ft. tall. Bark shaggy, dark brown. Latex thick, white. Wood white." June 1948, *Richard Evans Schultes & Francisco López 10043.*—Comisaría del Vaupés, same locality. "Tree 60 ft. tall with sparse crown. Bark shaggy, dark brown outside, pinkish inside. Fruits rose-red. Latex very thick and white. Leaves very coriaceous." June 1948, *Richard Evans Schultes & Francisco López 10058.*—Comisaría del Vaupés, Río Naquieni (affluent of Río Guainía), at base of Cerro Monachi. "Tree 40 ft. tall with small buttress roots. Bark thin, brown, roughish. Latex thick, white. Leaves unusually ovate." June 1948, *Richard Evans Schultes & Francisco López 10088.*—Comisaría del Vaupés, same locality. "Tree 50 ft. tall. Buttress roots. Trunk columnar, diameter 14–15 inches. Latex white, thick. Bark dark brown, rough." June 1948, *Richard Evans Schultes & Francisco López 10113.*—Comisaría del Vaupés, same locality. "Tree 45 ft. tall with sparse crown. Latex white." June 1948, *Richard Evans Schultes & Francisco López 10121.* —Comisaría del Vaupés, Río Guainía, Caño Nani below San Antonio. In extensive caatinga. "Tree 50 ft. tall with buttress roots and columnar trunk. Bark shaggy, dark brown outside, light red inside. Latex white. Flowers yellowish." June 1948, *Richard Evans Schultes & Francisco López 10131.*—Comisaría del Vaupés, same locality. In extensive savannah-like caatinga. "Bushy tree, 20 ft. tall with very small buttress roots. Bark dark brown, rough. Latex very thick, white. Leaves unusually round." June 1948, *Richard Evans Schultes & Francisco López 10158.*

Cunuria Spruceana *Baillon* in Adansonia 4 (1863–64) 288.

Cunuria Spruceana was first collected in Colombia by

Allen in 1943, along the Río Papurí, an affluent of the Río Vaupés; in the following year, I collected it from La Pedrera on the Río Caquetá and on the Río Miritiparaná (Baldwin and Schultes loc. cit. 342; Schultes in Caldasia 3 (1945) 247–249). In 1948, more material was collected from La Pedrera.

A most important discovery, however, is that of López who, in September 1948, collected *Cunuria Spruceana* from the headwaters of the Río Hamacayacu, an affluent of the Amazon above Leticia. Later, López and I located a number of trees of this species in the immediate environs of the town of Leticia. Known from a locality in adjacent Peru and from points on the Içá and at São Paulo de Olivença on the Amazonas itself, *Cunuria Spruceana* was to be expected near Leticia, even though several years of intensive collecting had previously failed to disclose its presence there. In the trapécio amazónico, this species occurs sporadically, not in abundance as often is the case in other areas. *Cunuria Spruceana* has no distinctive common name in the Spanish, Portuguese or Tikuna languages in the Leticia area, so far as we could learn.

COLOMBIA: Comisaría del Vaupés, Río Papurí, vicinity of Santa Teresita. "Tall trees averaging 35 m. in height, and 80 cm. in diameter above the conspicuously developed and unique stilt buttresses which are produced to a height of 3–4 m. as laterally compressed board-like flanges which act as flying buttresses, the bases widely detached from the trunk, the arch often high enough for a man to walk upright beneath. Leaves simple, with two basal disk-like glands. Inflorescence of small green flowers from axillary growth. Large trispermate capsule typical of *Hevea*. Bark very thin, 6–8 mm., with scanty latex which coagulates with difficulty, producing a non-elastic gum. Seeds collected by the local Indians for food. Known as *wah-puh* (Tukano)." August 15, 1943, *Paul H. Allen 3063*.—Comisaría del Amazonas, Río Hamacayacu. "Tree 80 ft. tall with huge buttress roots. Flowers yellowish. Latex very thin, white. Bark hard, brownish, thin. Wood white." September 1948, *Francisco López 1*.—Comisaría del Amazonas, Río Hamacayacu. "Tree 60 ft. tall with large buttress roots.

Flowers yellow. Latex white, watery. Bark thin and brittle.'' September 1948, *Francisco López 2.*—Comisaría del Amazonas, Leticia. ''Large tree with large buttress roots. Trunk columnar above buttress roots. Flowers yellowish. Latex watery, white.'' September 1948, *Francisco López 3.*—Comisaría del Vaupés, Río Guainía, near Sejál. ''Enormous tree, 80 ft. tall with large flaring buttress roots. Latex thin, white. Bark thin, hard, dark tan, smooth. Buds yellowish.'' June 1948, *Richard Evans Schultes & Francisco López 10057.*—Comisaría del Vaupés, Río Guainía, at base of Cerro Monachi. ''Enormous tree 85 ft. tall with extensive buttress roots. Latex white, thin.'' June 1948, *Richard Evans Schultes & Francisco López 10135.*—Comisaría del Vaupés, Río Guainía, Caño Nani below San Antonio. ''Buttressed tree 75 ft. tall. Trunk columnar, diameter 18–20 inches. Latex watery, white, sparse.'' June 1948, *Richard Evans Schultes & Francisco López 10163.*—Comisaría del Caquetá, Río Caquetá, La Pedrera, at Angostura. ''Tree 80 ft. tall; huge buttresses; trunk columnar, 2 ft. diameter above buttresses. Bark hard, reddish brown. Latex very thin, white, not coagulating. Flowers yellow.'' July 16, 1948. *Richard Evans Schultes & Francisco López 10221.*—Comisaría del Caquetá, Río Caquetá, La Pedrera, at Angostura. ''Corpulent tree 55 ft. tall, diameter above buttresses 15 inches. Bark hard, thin, reddish brown. Latex thin, watery, white, not coagulating. Flowers yellow.'' July 16, 1948, *Richard Evans Schultes & Francisco López 10222.*—Comisaría del Amazonas, Leticia. ''Corpulent tree 75 ft. tall. Extensive buttress roots up to 6 ft. high. Bark dark brownish-tan, thin, hard. Flowers yellow.'' November 1948, *Richard Evans Schultes & Francisco López 10257.*

Senefeldera chiribiquetensis *R. E. Schultes & L. Croizat* in Caldasia 3 (1944) 122.

Matching the type and topotype material of *Senefeldera chiribiquetensis* perfectly, *Cuatrecasas 7682* establishes the occurrence of this curious endemic slightly northwestward of the type locality which is the confluence of the Ríos Macaya and Ajaju in the Apaporis drainage-area. More interesting, however, is the discovery, through *Cuatrecasas 7682*, that *Senefeldera chiribiquetensis*, hitherto believed to be confined to cretaceous quartzite hills, also occurs on granite of a much earlier (probably Cambrian) age.

A search for *Senefeldera chiribiquetensis* on a number of granitic peaks in the upper Rio Negro and lower Rio Uaupés in Brazil (of the same age as the granite at San José del Guaviare) has indicated that it is apparently not present on Serra Curicuriarí, Serra Cocuí and similar mountains of the area. Indeed, during my explorations in the upper Rio Negro basin in 1947–48, I found no species of *Senefeldera* whatsoever.

COLOMBIA: "Río Guaviare, San José del Guaviare. Terrenos graníticos, sabana, 270 m. alt. Arbol latex." 12 septiembre, 1939, *J. Cuatrecasas 7682* (U. S. Nat. Herb. 1774175).

HIPPOCRATEACEAE

Tontelea attenuata *Miers* in Trans. Linn. Soc. London Bot. 28 (1872) 384.

According to A.C.Smith (in Brittonia 3 (1940) 474), this beautiful, low tree is known from the original Spruce collections in the Rio Negro country of Brazil, from the basin of the Rio Madeira of Brazil, and from British Guiana and eastern Peru and Colombia. *Schultes 5385* represents the second collection from Colombia. The first was *Klug 1967* from the Putumayo, a great distance from the Vaupés locality cited below.

COLOMBIA: Comisaría del Vaupés, Macaya–Ajaju River confluence, Mount Chiribiquete. Quartzite base. Summit 800–1200 ft. above forest floor, 1700–2100 ft. above sea level. "Small tree. Flowers white, probably turning brown. Odour of cinnamon pronounced. Bark smooth, brown. Along banks." May 15–16, 1943, *Richard Evans Schultes 5385*.

SAPINDACEAE

Paullinia scaberula *R. E. Schultes sp. nov.*

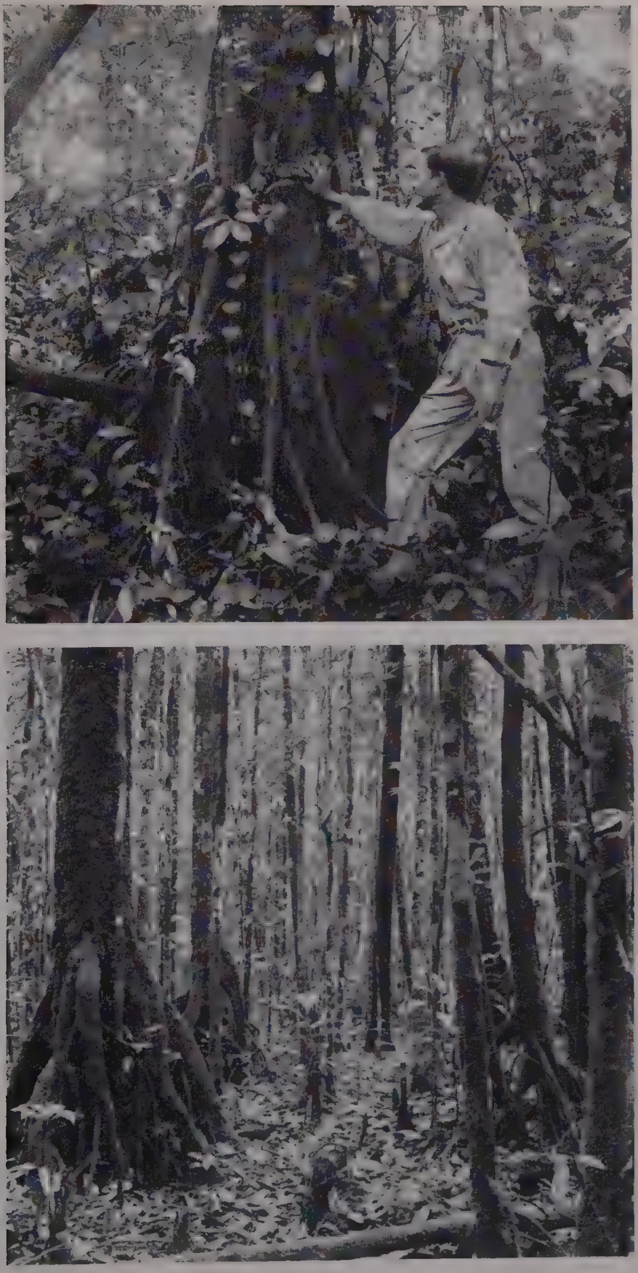
Vitis parva. Rami graciles, fusco-rufo cum cortice et pilis nigris debilibus usque ad 6 mm. longis et dense saetigeribus armati. Ramuli subteretes, similes. Folia quinquepinnata, usque ad 30–35 cm. longa, 25 cm. lata. Rhachis nuda (exalata), firma, scaberula nigris cum pilis,

EXPLANATION OF THE ILLUSTRATIONS

Plate XXIX. (Upper figure). Basal portion of the trunk of *Septotheca Tessmannii*, the individual from which the collection *Schultes & Black 8612* was made.

(Lower figure). View in a caatinga forest on the Río Naquieni, Comisaría del Vaupés, Colombia. The trees with stilt roots are *Cunuria crassipes;* the slender, columnar trunks represent *Hevea rigidifolia.*

PLATE XXIX



plerumque 16 cm. longa, 2 mm. in diametro. Foliola elliptica, 10–15 cm. longa, 5.5–7.5 cm. lata; superiora aequalia, apice acuminata, margine longe et leviter sinuata, valde membranacea, utrinque aspero-pilosa, atroviridia, lateralibus cum nervis plerumque duodecim supra et subtus elevatis, nervis praecipuis et secundariis utrinque pilosis; petioli nudi. Inflorescentiae axillares, racemiformes, multiflorae, 6–8 cm. longae. Pedicelli robusti, 2–4 mm. longi, bracteis minutissimis, triangulari-subulatis, 0.5 mm. longis. Flores parvi, albi. Sepala quinque; duo exteriora crassa, extus et intus glabra, subovalia, apice rotundata, margine ciliata, 1.5 mm. longa, 1.3 mm. lata; tria interiora majora, membranacea, rotundata, intus et extus glabra, fere 2.5 mm. longa, 2 mm. lata, valde inflexa, margine ciliata. Tori glandulosi quattuor, crassi, linguiformes. Petala quattuor, submembranacea, integra, obovata, apice rotundata, glabra, 3–3.5 mm. longa, 1.5 mm. lata. Stamina octo, ex floribus prominenter exserta. Staminum filamenta pilis longioribus lanatisque dense vestita, 1.5–2 mm. longa. Antherae glabrae, 0.4 mm. longae. Ovarium obovoideum, 1 mm. in diametro, glabrum, cum stylo glabro 1 mm. longo coronatum. Stigma profundissime trifidum, lobis crassis, pustulatis et circinnatis. Fructus capsularis, trivalvis, subdrupaceus; capsula oblique ovoidea, in stipitem attenuata, rostrata (styli reliquiis coronata), ecostata et exalata, epicarpio parum crasso, praeter stipitis basim glabra, 6–7 mm. longa, 3–4 mm. lata, rostra usque ad 2 mm. longa.

This new species is unusual in aspect and is distinguished easily by its having black scaberulent hairs along the branchlets.

Brazil: Estado do Amazonas, Sao Paulo de Olivença. "Mata da terra firme. Cipozinho fino, caulifloro, flôr branca." April 3, 1944, *A. Ducke 1628* (Type in Herb. Inst. Agron. Norte, Belém).

Septotheca Tessmannii *Ulbrich* in Notizbl. Bot. Gart. Berlin 9 (1924) 129, t. 3.

This gigantic, upper Amazonian tree, very rare indeed in collections, has hitherto only been observed, never collected, in Colombian territory (Schultes in Bot. Mus. Leafl. Harvard Univ. 12 (1946) 118). The two collections cited below establish beyond any doubt that this concept, described from material from the Río Ucayali in Loreto, Peru, and found by Ducke and by Schultes near Tabatinga, Amazonas, Brazil, a few miles from Leticia (Ducke in Bol. Técn. Inst. Agron. Norte 4 (1945) 21–22), is a prominent element of the vegetation of certain areas of the Amazon band of the Colombian *trapécio amazónico* and must be added to our enumeration of Colombian plants.

In November 1948, I returned to the locality of these two collections and discovered that the colony of trees from which they were gathered no longer exists. The current of the Amazon at this point has recently wrought such destruction by washing away several hundred feet of bank that the mouth of the Boiauassú has a different configuration than formerly. (Plate XXIX, upper fig.)

COLOMBIA: Intendencia del Amazonas, Trapécio amazónico, mouth of the Río Boiauassú, alt. about 100 m. "Enormous tree; buttress roots. Flowers yellowish green, mucilaginous. *Sapotilla.*" October 1945, *Richard Evans Schultes 6888.*—Same locality. "Sepals green-yellow. Tree 80 ft. tall, great buttress roots. *Zapoterana.*" October 27, 1946, *Richard Evans Schultes & George A. Black 8612.*

STERCULIACEAE

Herrania albiflora *Goudot* in Ann. Sci. Nat. sér. 3, 2 (1844) 230, t. 5, figs. 1–10.

The specimen cited below, one of the earliest collections of the species, was identified as *Herrania albiflora* at Kew by Planchon, who annotated the sheet. It is a topotype.

The report of the collector of this specimen relative to his having seen "several hundreds of fruits" on a cultivated tree of *Herrania albiflora* must be recognized as an exaggeration. Although fruits are often very numerous in most species of *Herrania*, I have never met, in my field studies of the genus, any condition which would indicate "hundreds of fruits."

COLOMBIA: Departamento de Cundinamarca, "Río Guaco, near Muzo. *Cacao simaròn* vg. name, in some districts no other cacao is known than this; the arillus around the seed is much esteemed for its delicious flavour and sweetness; it bears abundantly, on one tree (cultivated) I saw several hundreds of fruits but in a green state. I believe it to be a hardier species than *T. cacao* as it is a native of the lower mountain, while *T. cacao* is a native of the hotter plains. This species is often of the same habit and size as *T. cacao*. Hab. in dense woods . . . . Of this I was able to obtain ripe fruit." December 1845, *William Purdie sine num.* (TOPOTYPE in Herb. Kew).

Herrania kanukuensis *R. E. Schultes* in Caldasia no. 6 (1943) 11.

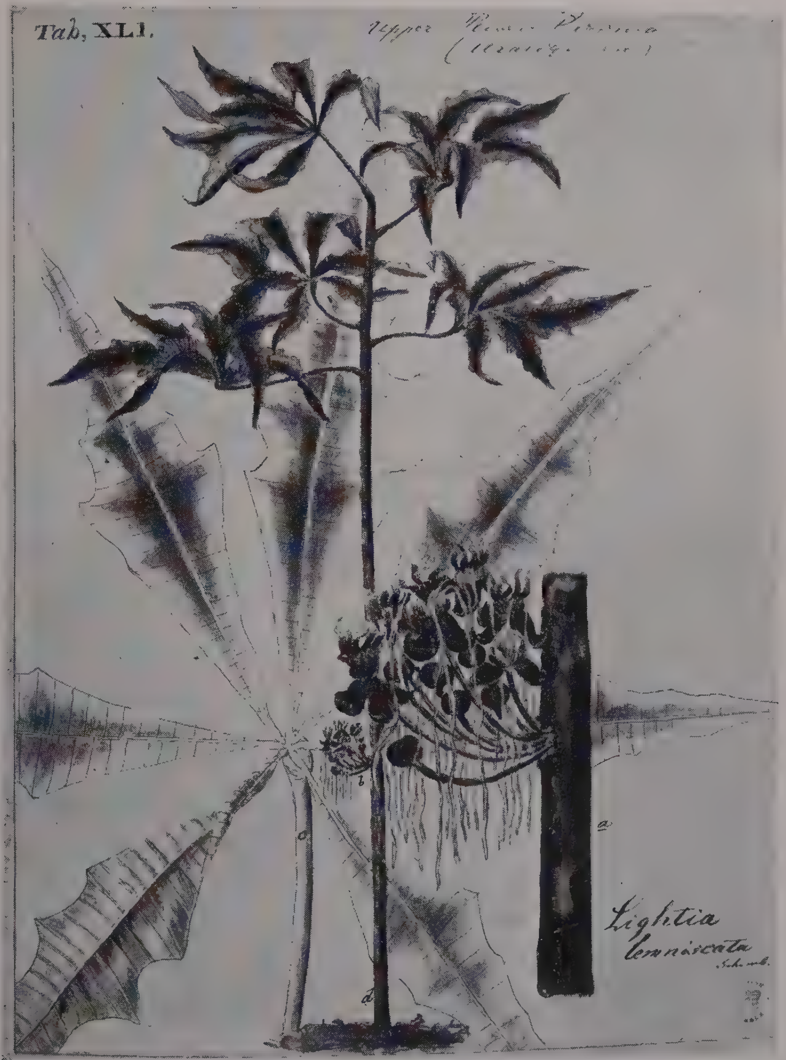
A duplicate type of *Herrania kanukuensis* at Kew (*A. C. Smith 3541*) has several leaflets which tend to be slightly irregularly dissected, suggesting a condition which approaches that of some specimens of *H. lemniscata* in which the leaflets are abnormally developed. In the original description of *Herrania kanukuensis*, the leaflets are described as "margine subintegra, saepe prope apicem subundulato-sinuato." In their fruit, however, these two concepts are clearly distinct. It is obvious that *Herrania lemniscata* represents a link between *H. laciniifolia* of Colombia and *H. kanukuensis* of British Guiana which is, in turn, probably allied to the several Amazonian species.

Herrania laciniifolia *Goudot ex Triana & Plan-*

EXPLANATION OF THE ILLUSTRATION

PLATE XXX. Schomburgk's field painting of *Lightia lemniscata*, tab. XLI in the Schomburgk collection of water colors in the British Museum.

PLATE XXX


Tab. XLI.
Upper Rio Parana
(Uruguay [illegible])
a
b
c
d
Lightia
lenniscata
Schomb.

chon apud García-Barriga in Caldasia no. 2 (1941) 55, t. 1, 4.

Collections of *Herrania laciniifolia* are not frequent. It is unfortunate that a precise locality for *Kalbreyer 2047* is not available.

COLOMBIA: "New Granada, 4000 ft. Shrub, stem simple 10–12 ft. lf., yellowish, woody, rough, 3½ ft. l. 4 br., fl. on the stem below, red brown with bunch of greenish white petals, 7–8 in., threadlike, brownish white, pendulous." May 18, 1881, *Kalbreyer 2047* (Herb. Kew, 2 spec.).

Herrania lemniscata (*Schomb.*) *R. E. Schultes* in Caldasia no. 6 (1943) 13.

In 1943, when I validated the Schomburgk concept and made the new combination *Herrania lemniscata*, European collections were unavailable for study. Recently, additional and extensive material which I have seen in England indicates that *Herrania lemniscata* is a very distinct species. Schomburgk's original water colors, made in the field, are preserved at the British Museum of Natural History. Included in the collection is an excellent painting (tab. XLI) of this concept (as *Lightia lemniscata*) which is herein reproduced because it depicts with unusual accuracy the habit of the small tree. (Plate XXX)

Furthermore, the material at Kew has excellent fruiting specimens, so that it is now possible to describe the capsule:

Fructus longe pedunculatus (pedunculus robustus, glaber vel glabrescens, usque ad 4.5 cm. longus, 3 mm. in diametro), perfecte ovoideus, 7 cm. longus, 4 cm. in diametro, apice brevissime et abrupte cuspidatus, basi subrotundatus, omnino dense et minute stellato-pilosiusculus, sine pilis urticantibus ut videtur, decem-costatus quinque cum costis primariis, angustis subhumilibusque, 2 vel 4 (siccitate) mm. altis, 1–2 mm. crassis, subcultriformibus, atque quinque cum costis secundariis similibus, minoribus, pericarpio inter costas longitudinales valde reticulato-costato tenuissimo, maturitate probabiliter luteo. Semina plura quam sexaginta ut videtur, in circuitu triangularia vel angulato-ovata, complanata, 12×11×11 mm., plusminusve 4 mm. crassa, in pulpa alba inclusa.

Of the specimens cited below, fruits in mature condition are preserved in *im Thurn sine num.* (which I have chosen as the type of the fruit), *Rusby & Squires 252* and *Forest Department Brit. Guiana Record No. 4500.* The last of these three collections has a 6-costate fruit, an unusual and probably abnormal departure from the 5-parted condition of the genus.

British Guiana: "Banks of Barima River" *Schomburgk* (Herb. Kew, 3 spec.)—[Everard] *im Thurn sine num.* (Herb. Kew, fructus typus, 4 spec.).—"Upper Arawau River, Aruka River, N.W.D. Mixed forest in swamp and on rather swampy soil. Small tree, 20–30 ft., but told by Indians it grows larger. Trunk 4 in. diam. at 6 ft. from ground. Leaves alternate, large, compound, palmate, 6-lobed in specimens taken. Slender paired stipules at base. Flowers cauliferous at base of trunk. Arawak dialect: *bur-oo-ma.*" May 1929, *Martyn 61.* (Herb. Kew, 2 spec.).—"Essequibo River, White Creek, Groete Ck. 15 ft. high, soft-wooded tree from clearing with terminal, peltate, long-stalked lvs., pubescent below, br. velvety on petiole and midrib beneath; fr. cauliflorus, fascicled, 1–4 together, drooping, long-stalked ovoid-globose, acuminate with 6 major and 6 minor ribs and numerous lesser oblique ridges between ribs, greenish, the ribs darker, thinly bony with an inner pithy layer, seeds forming a soft, white oblong-globose mass divided into 6 segments shaped like orange flakes, each flake consisting of 3 seeds embedded in thin, sugary pulp with a very sticky coating to testa—testa pale brown finely pitted, wrinkled and veined—seed trigonous." *Forest Dept. British Guiana Field No. F1764, Record No. 4500* (Herb. Kew).

Venezuela: "Catalina, Lower Orinoco" 1896, *H. H. Rusby & Roy W. Squires 252* (Herb. Kew, 2 spec.).

Herrania purpurea (*Pittier*) *R. E. Schultes* in Caldasia no. 9 (1944) 333.

The following collections of *Herrania purpurea* emphasize the common occurrence of this representative of a South American genus in adjacent areas of Central America, as far north as the Republic of Nicaragua. The species appears to be concentrated especially in Panama.

The Colombian collection cited below is the second collection from Colombia and the South American continent. The first, *Schultes 5754*, (reported in Caldasia no. 11 (1944) 23, t. 1, 2), was from the region near Turbo. *Schultes & López 10464*, while from the same general area (the Golfo de Urabá), places *Herrania purpurea* much farther to the south.

COLOMBIA: Departamento de Antioquia, Golfo de Urabá, Villa Arteaga, Municipio de Pavorandocito. "Small tree 8 ft. tall." December 1948, *Richard Evans Schultes & Francisco López 10464.*

NICARAGUA: 1867, *Seemann sine num.* (Herb. Mus. Brit.).

PANAMA: "Chiriquí" [Rec'd.] June 1886, *J. H. Hart sine num.* (Herb. Kew). *Sutton Hayes sine num.* (Herb. Kew; Herb. Mus. Brit.) Canal Zone, near Madden Dam, "near sea level. Forest. Shrub, simple stem 10 ft.; fruits yellow." June 9, 1939, *A. G. H. Alston 8861* (Herb. Mus. Brit.; Herb. Gray).

DILLENIACEAE

Saurauia rigidissima *R. E. Schultes sp. nov.*

Arbor parva et pulcherrima ut videtur. Rami lignosi strigillosique cum pilis subhamulatis, fusco-ferrugineis, 4 mm. longis dense obtecti. Folia rigide coriacea, obovata, apice rotundata, basi cuneata, margine remotissime subdenticulata, 29–41 cm. longa, 12.5–16 cm. lata; infra (siccitate) aureo-brunnea, dense et minutissime granulosa, maximopere minutissime et subremote stellato-pilosa; supra (siccitate) brunneo-viridia, subnitida; venis crassis, hamulato, strigosis, supra planis, infra prominenter elevatis; petioli robustissimi, hamulato-strigosi, 4.5 cm. longi, 5 mm. crassi. Inflorescentiae erectae, foliis aequales vel longiores, multiflorae, dense paniculatae; bracteae pedicellos subtendentes minutissimae, triangulares, 0.7 mm. longae, hispidulae. Alabastra globosa. Flores parvi, aperti 8–10 mm. in diametro. Sepala quinque, inaequalia; exteriora tria membranacea, ovata, apice rotundata, 5–6 mm. longa, 3 mm. lata, glaberrima, alba, inflexis cum marginibus; interiora duo membranacea, suborbicularia, 5.5 mm. longa, 4.5 mm. lata, alba. Petala quinque, membranacea, alba, rotundato-ovata, 6 mm. longa, 4.5 mm. lata. Stamina circiter 28, basi albo-barbata; filamenta 2 mm. longa. Antherae plusminusve 1.8 mm. longae. Ovarium globosum, stylis quinque filiformibus, 3 mm. longis, apice in stigmata leviter dilatatis. Fructus maturus adhuc ignotus.

The peculiar fragile texture of the highly coriaceous and rigid leaf of this new species distinguishes *Saurauia rigidissima* from the other known Colombian members of the genus. According to the field notes, the leaves are fragile even in life. There are also minor distinguishing characters in the hairs of the petiole and branch.

COLOMBIA: Departamento del Valle, "Cordillera Occidental, Los Farallones, vertiente oriental: abajo de Almorzadero, bosque 2850–2880 m. alt. Arbolito. Hoja grande, coriacea, rígida, frágil, verde grisácea haz, verde claro envés. Cáliz verde pálido. Corola blanca," July 25, 1946, *J. Cuatrecasas 21716* (TYPE in Herb. Gray).

FLACOURTIACEAE

Mayna amazonica (*Martius ex Eichler*) *J. F. Macbride* in Field Mus. Publ. Bot. 13, pt. 4 (1941) 16.

Rather widespread in the Amazon drainage-area, *Mayna amazonica* extends up to the very slopes of the Andes in eastern Colombia. This is the second collection from the Comisaría del Putumayo (Schultes in Caldasia 3 (1945) 439). Among the Kofán Indians, the bark of the trunk of this small tree is used as an ingredient of curare.

COLOMBIA: Comisaría del Putumayo, Río San Miguel ó Sucumbíos, Conejo y alrededores frente a la Quebrada Conejo, alt. 300 m. "Nombre kofán: *tzá-he-vee-ko.* Tree." 2–5 abril, 1942, *Richard Evans Schultes 3515.*

Mayna pacifica *Cuatrecasas* var. **pusilla** *R. E. Schultes var. nov.*

Frutex parvus, usque ad tres pedes altus, ab *Mayna pacifica* specialiter foliis minoribus (usque ad 35 cm. longis et 11 cm. latis), infra glabris atque fructu minore (solum 4 cm. longo et 2.5–3 cm. in diametro) cum alis membranaceis profunde fimbriato-dentatis differt. In provincia Chocó nomen vulgaris: "clavo."

This newly described variety differs from *Mayna pacifica* Cuatr. in being much smaller in all its parts and, most conspicuously, in having elaborate and deeply fimbriate wings on the fruit. In *Mayna pacifica,* the fruit is two and one half times as long as in var. *pusilla* and the wings are strongly and irregularly dentate, not approaching the echino-fimbriate condition found in var. *pusilla.*

Mayna pacifica var. *brachycarpa* Cuatr. is also larger than var. *pusilla,* and the wings of its fruit are barely conspicuous.

Mayna pacifica and the var. *brachycarpa* are native to the Pacific slopes of the cordillera in the Departamentos del Cauca and Valle, respectively, slightly south of the general region of Quibdó, where the type of var. *pusilla* was collected.

Colombia: Intendencia del Chocó, Headwaters of Río Tutunendó, east of Quibdó. "*Clavo.* Slender shrub 2–3 ft. Flw. and fruit white. Flw. faintly scented." May 20–21, 1931, *W. A. Archer 2195.* (Type in U. S. Nat. Herb. No. 1518794).

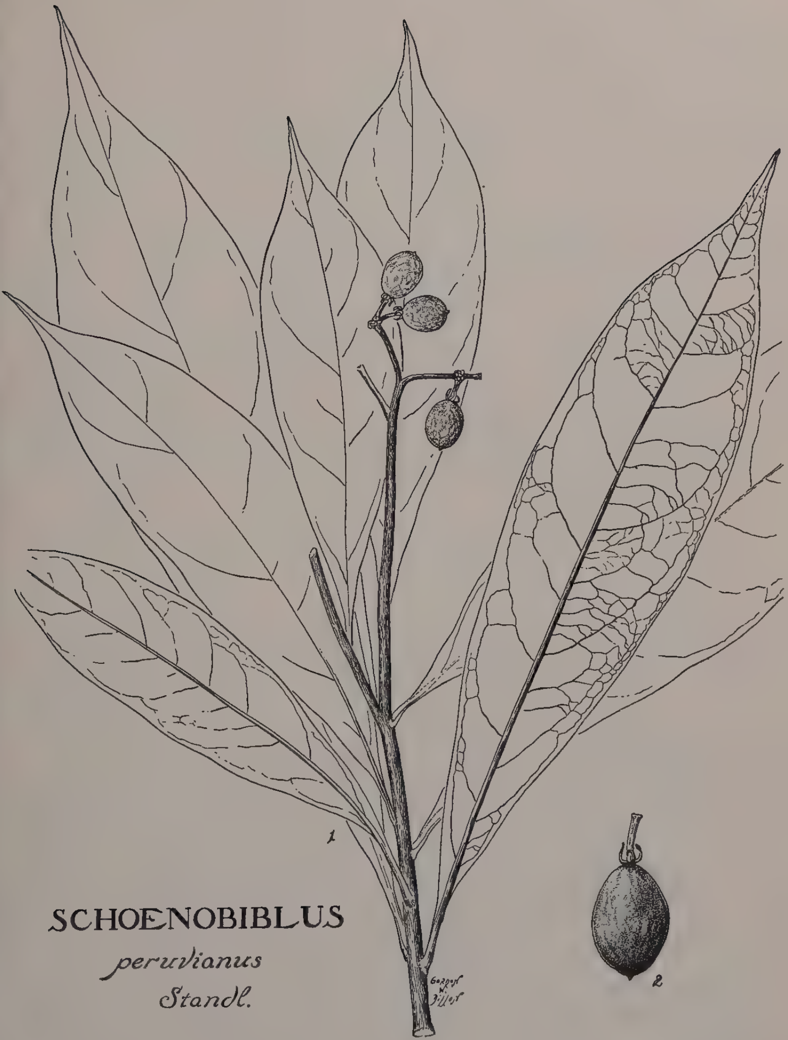
THYMELEACEAE

Schoenobiblus peruvianus *Standley* in Field Mus. Publ. Bot. 11 (1936) 169.

EXPLANATION OF THE ILLUSTRATION

PLATE XXXI. SCHOENOBIBLUS PERUVIANUS *Standley.* 1, fruiting branch, approximately one half natural size. 2, fruit, approximately natural size.

PLATE XXXI



SCHOENOBIBLUS
peruvianus
Standl.

Schoenobiblus peruvianus has hitherto not been recorded from Colombia. The only other representative of this genus in Colombia is *Schoenobiblus coriaceus* Domke, which has been found on Sierra Santa Marta at an altitude of 4,500 feet.

Schoenobiblus peruvianus is a very important ingredient in the arrow-poisons of the Kofán Indians of the Putumayo. Both the fruits and the root are employed. This is apparently the first report of a member of the *Thymeleaceae* as an ingredient of curare.

COLOMBIA: Comisaría del Putumayo, Río San Miguel ó Sucumbíos, Conejo y alrededores, frente a la Quebrada Conejo, alt. 300 m. "Large shrub. Root furnishes one of the poisons for curare." 2–5 abril, 1942, *Richard Evans Schultes 3486*.—Same locality. "Small shrub. Poison: crushed fruits an ingredient of curare." 2–5 abril, 1942, *Richard Evans Schultes 3521*.—Same locality. "Poison. Fruits used in making curare. Shrub." 2–5 abril, 1942, *Richard Evans Schultes 3655*.—Comisaría del Putumayo, Río San Miguel ó Sucumbíos, Santa Rosa y los alrededores, alt. 380 m. (?). "Roots and fruits used in Kofán curare preparation." 7–8 abril, 1942, *Richard Evans Schultes 3613*

SAPOTACEAE

Lucuma dolichophylla *Standley ex Llewelyn Williams* (sine diagn. lat.) in Field Mus. Publ. Bot. 15 (1936) 411.

Arbor 45–70 pedes alta, recto cum trunco plusminusve cylindrico, 8–20 poll. in diametro, ramo inferiore 12–35 pedes ab humo. Cortex extus atropurpureo-fuscus, dulce cum latice, intus grosse fibrosus. Flores parvi albique. Fructus rotundatus, indumento brunneo velutinoque maturitate lutescenti obtectus, esculentus.

This concept was described in English without a Latin diagnosis in Williams' "Woods of northeastern Peru." The name is here validated by rendering the English description into Latin.

Strychnos brachiata *Ruiz & Pavon* Fl. Peru. et Chil. 2 (1799) 30.

This species, known apparently only from subandean Peru and Bolivia (Krukoff and Monachino in Brittonia 4 (1942) 269), is now registered from Colombia (Krukoff and Monachino in Bol. Técn. Inst. Agron. Norte 12 (1947) 10) on the basis of the following collection.

COLOMBIA: Comisaría del Putumayo, Río San Miguel ó Sucumbíos, Santa Rosa y los alrededores. Nombre kofán: *se-hé-pa*. "Vine. Root used in preparation of arrow poison." 7–8 abril, 1942, *Richard Evans Schultes 3602.*

Strychnos Erichsonii *Richard Schomburgk* Faun. Fl. Br. Guiana (1848) 1082, nomen; ex Progel in Martius Fl. Bras., 6, pt. 1 (1868) 274.

An Amazonian species, *Strychnos Erichsonii* was collected in Brazil (Ducke in Bol. Técn. Inst. Agron. Norte 3 (1945) 14) near the Colombian frontier, and was reported by Krukoff and Monachino (in Caldasia 4 (1946) 46) as one of the species to be expected in the Amazonian regions of Colombia. The collection cited below establishes the occurrence of the species in the southwesternmost sector of the Colombian Amazon area. It is known also from British and Dutch Guiana and Venezuela.

COLOMBIA: Comisaría del Putumayo, Río San Miguel ó Sucumbíos, Conejo y los alrededores, en frente de la Quebrada Conejo. Nombre kofán: *ir-rro-chee*, 2–5 abril, 1942, *Richard Evans Schultes 3524.*

Strychnos Jobertiana *Baillon* in Adansonia 12 (1879) 367.

This species of *Strychnos* has apparently not been collected hitherto from Colombia. Known from Amazonian Peru, Ecuador and Brazil, it was first indicated as probably occurring also in Colombia by Krukoff and Monachino in Caldasia 4 (1946) 45. The Canelos Indians of Ecuador use the bark of the stem and roots in preparing curare (Krukoff and Monachino in Brittonia 4 (1942) 282).

Colombia: Comisaría del Putumayo, Río San Miguel ó Sucumbíos, Conejo y los alrededores, frente a la Quebrada Conejo. Nombre kofán: *ir-rro-chee.* "Bark of root used in curare formula." 2–5 abril, 1942, *Richard Evans Schultes 3523.*—Intendencia del Amazonas, Río Loretoyacu, November 1946, *George A. Blaçk & Richard Evans Schultes 46–262.*

Strychnos Peckii *B. L. Robinson* in Proc. Am. Acad. 49 (1913) 504.

This collection establishes the occurrence of *Strychnos Peckii* in the Colombian Amazonas (Krukoff and Monachino in Bol. Técn. Inst. Agron. Norte 12 (1947) 13). Hitherto known only from Colombia through one collection from the Valle del Cauca (Krukoff and Monachino in Lloydia 9 (1946) 65), it was to be expected as an element of the Amazonian flora. It ranges very widely, from Guatemala to Brazil and Bolivia (Ducke loc. cit. 14).

Colombia: Comisaría del Putumayo, Río San Miguel ó Sucumbíos, Santa Rosa y los alrededores. Nombre kofán: *se-hé-pa.* "Root used in curare preparation. Small tree." 7–8 abril, 1942, *Richard Evans Schultes 3601.*

Strychnos rondeletioides *Spruce ex Bentham* Journ. Linn. Soc. 1 (1856) 104.

Strychnos rondeletioides has been known from Colombia hitherto through material collected along the Río Vaupés (Krukoff and Monachino in Caldasia 4 (1946) 43). *Schultes 3829* was collected in the southernmost sector of the Colombian Amazon drainage area. The species also occurs in Amazonian Bolivia, Brazil and Peru, as well as in Venezuela (Ducke loc. cit. 11).

COLOMBIA: Intendencia del Amazonas, Río Karaparaná, entre las bocas y El Encanto, alt. ca. 150 m. "Bush. Fruit blue-black or orange-red." 22–28 mayo, 1942, *Richard Evans Schultes 3829.*

SOLANACEAE

Solanum apaporanum *R. E. Schultes sp. nov.*

Since I have been unable to find any material of Solanum from the Amazon Valley to match this curious concept, I am describing it as new.

Fruticulus scandens. Rami teretes, glabri, spinosi, tenui cum cortice cinereo-fusco. Ramuli sordide fusco-pulverulenti. Folia mediocria, brevissime petiolata, subchartacea, elliptica, integra, apice longissime acuminata, basi cuneata, aequalia, 3.5–7.5 cm. longa, 1.5–2.3 cm. lata, supra sordide fusco-viridia, aspera, omnino dense et minute stellato-pilosa, subtus viridia pallida, densissime stellato-pilosa, nervo centrali retrorso-spinoso; petioli 2–4 mm. longi. Inflorescentia umbellata, pauciflora, pedicellis comparate robustis, rectis, 7–10 mm. longis, densissime fusco-pilosis. Alabastrum 4 mm. longum. Calyx omnino densissime stellato-pilosus, lobis breviter acutis, stellato-pilosis. Corolla profunde lobata extus stellato-pilosa, lobis anguste triangulari-acutis, 8 mm. longis, basi 2 mm. latis, membranaceis, albis, valde patentibus. Antherae conspicuae, flavae, 6–8 longae, apice poriferae. Bacca perfecte globosa (sine rostro), vivo 1–1.3 cm. in diametro, nitidissima, aureo-rubens.

COLOMBIA: Comisaría del Vaupés, Macaya-Ajaju River confluence. Mount Chiribiquete. Quartzite base. Summit 800–1200 ft. above forest floor, 1700–2100 ft. above sea level. "Spiny vine-shrub. Fruit orange. Flowers white, anthers yellow." May 15–16, 1943, *Richard Evans Schultes 5406.* (TYPE in Herb. Gray.)